

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Chengua "Oliver" Han	§	Group Art Unit:	3641
		§		
		§		
Serial No.:	10/027,727	§	Conf. No.:	9783
		§		
Filed:	December 21, 2001	§	Examiner:	Stephen Johnson
		§		
For:	SHAPED CHARGE	§	Atty. Dkt. No.:	22.1450
		§		SHL.0227US

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

REPLY BRIEF

Dear Sir:

Applicant acknowledges that the Examiner has withdrawn Grounds of Rejection D, E and F.

In the Examiner's Answer, the Examiner has introduced new grounds of rejection without properly designating these grounds as such. More specifically, for the first time during the prosecution of the application, the Examiner, in the Examiner's Answer, provides and extensively relies on an English translation of Frye, which is a foreign language document. Because the Examiner is relying on newly introduced evidence in the Examiner's Answer without appropriately recognizing the corresponding new grounds of rejection, Applicant is concurrently filing a Petition for a Corrected Examiner's Answer Designating the New Grounds of Rejection.

Applicant's Reply to the Examiner's Answer is set forth below.

1. § 102 Rejections of Claims 1, 33 and 42 Based on Frye and English translation of Frye

Applicant maintains that Frye fails to anticipate claim 1 for at least the reason that Frye fails to disclose at least one axially oriented slot in the wall of a charge case of a shaped charge about which the charge case is adapted to fracture in response to detonation of an explosive material.

In the Examiner's Answer, the Examiner relies on the last two paragraphs on page 2 as well as on lines 12-23 on page 3 of the English translation of Frye. Examiner's Answer, pp. 5 and 6. In particular, the Examiner contends that the English translation discloses that in response to detonation of an explosive material, a ring 10 of Frye's shaped charge separates from Frye's shaped charge housing along an axially-oriented portion of an adhesive layer 30 (see Fig. 1 of Frye) that is used to bind the ring 10 to the shaped charge housing. Examiner's Answer, pp. 5 and 6.

Applicant respectfully submits, however, that the Examiner errs in this factual finding, as Frye fails to disclose separation of the ring 10 along the boundary that is defined by the adhesive layer 30 in response to detonation of an explosive material. In this regard, contrary to the untenable conclusion reached by the Examiner, the English translation states that the ring 10 breaks apart at laterally-oriented break sections 32 and 34 and not along the boundary formed by the adhesive layer 30. *See, for example*, lines 16-17 on page 3 of the English translation. As illustrated in Fig. 3 of Frye, the break sections 32 and 34 are neither axially oriented nor are sections 32 and 34 disposed in the boundary defined by the adhesive layer 30.

Therefore, contrary to the argument that is advanced by the Examiner, the skilled artisan would not glean from Frye (as interpreted in view of the English translation) the teaching that the ring 10 separates from the housing along the adhesive layer 30. Moreover, the English translation states that the adhesive 30 may be replaced by a weld, which is certainly inconsistent with an expectation that the ring 10 separates from the shaped charge housing where the ring 10 and housing are bonded together in response to detonation of an explosive material.

Thus, for at least the foregoing reasons, Frye fails to disclose the combination features that are expressly recited in claim 1, such as an axially oriented slot in the wall of a charge case

of a shaped charge about which the charge case is adapted to fracture in response to detonation of an explosive material.

Independent claims 33 and 42 overcome the § 102 rejections for similar reasons.

Thus, Applicant maintains that the § 102 rejections of claims 1, 33 and 42 are in error and should be reversed.

2. § 103 Rejection of Claim 17

The Examiner relies on Frye for purportedly disclosing a charge case that defines at least one axially oriented slot in a wall about which the charge is adapted to fracture in response to detonation of an explosive material. However, for at least the reasons that are set forth above, the Examiner's finding that Frye (in view of the English translation) teaches these limitations is in error. Moreover, the Examiner does not contend that Turecheck discloses or renders obvious the missing claim limitations; and the Examiner fails to set forth any plausible reason to explain why the skilled artisan would have otherwise derived the missing claim limitations.

Thus, Applicant maintains that the § 103 rejection of claim 17 is in error and should be reversed.

3. § 103 Rejections of Claims 6 and 44

The Examiner fails to identify any plausible reason to explain why the skilled artisan would have modified Frye's charge housing in view of Chawla's disclosed manufacturing process to impart a V-notched groove in Frye's charge housing, and on at least this basis, errs in the § 103 rejections of claims 6 and 44. As the Supreme Court held in *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007), it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. The Examiner, however, fails to meet this burden.

The score marks, or alleged V-notched grooves, in the liner sheet disclosed in Chawla are in place for purposes of facilitating separation of the individual liners from the liner sheet during manufacturing of the liners. The skilled artisan would not glean from Chawla's disclosure, however, the concept of imparting such a V-shaped notch in Frye's charge housing; and there is

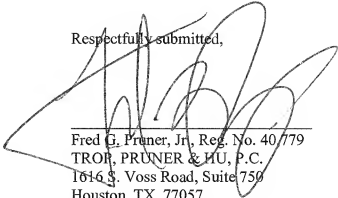
no apparent reason for such a modification, as Frye discloses a completed shaped charge and not a shaped charge at a particular stage during the manufacturing of the shaped charge. Thus, in essence, the § 103 rejections fail to answer the question of why would the skilled artisan in possession of Chawla and Frye modify Frye's shaped charge housing to include the V-shaped notch that is present in Chawla's sheet of multiple liners, absent impermissible hindsight gleaned from the present application? Not only has the Examiner failed to identify such a reason, it is illogical to conclude that the skilled artisan would have incorporated a feature directed to breaking apart liners from each other during their manufacture into a shaped charge, especially when the finished liner product does not include this feature.

Thus, Applicant maintains that the § 103 rejections of claims 6 and 44 are in error and should be reversed.

The Commissioner is authorized to charge any fees or credit any overpayment to Deposit Account No. 20-1504 (SHL.0227US).

Date: 7-07-10

Respectfully submitted,



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APPENDIX OF CLAIMS

The claims on appeal are:

1. A controlled debris perforating system, comprising:
a shaped charge comprising a charge case having a wall defining a recessed region, an explosive material received in the recessed region and a liner disposed in the charge case, the charge case defining at least one axially oriented slot in the wall about which the charge case is adapted to fracture in response to detonation of the explosive material.
6. The controlled debris perforating system of claim 1, wherein the at least one slot is a V-notched groove.
7. The controlled debris perforating system of claim 1, wherein the at least one slot is an external slot.
17. A method of using one or more shaped charges in a well, comprising:
providing a perforating string having one or more shaped charges, the shaped charges comprising a charge case having a wall defining a recessed region, an explosive material received in the recessed region and a liner disposed in the charge case, the charge case defining at least one axially oriented slot in the wall about which the charge case is adapted to fracture in response to detonation of the explosive material; and
conveying the perforating string into the well.
18. The method of claim 17, wherein the perforating string comprises a loading tube and carrier.
19. The method of claim 17, wherein the perforating string comprises a spiral gun.
23. The controlled debris perforating system of claim 1, wherein said at least slot comprises at least one groove formed in the wall of the case.

25. The controlled debris perforating system of claim 23, wherein said at least one groove is cut into the wall of the case.

28. The method of claim 17, wherein said at least slot comprises at least one groove formed in the wall of the case.

30. The method of claim 28, wherein said at least one groove is cut into the wall of the case.

33. A method of controlling the debris during perforating, comprising:
providing a shaped charge comprising a charge case having a wall defining a recessed region, a liner disposed in the charge case and an explosive received in the recessed region, the charge case defining at least one axially-oriented groove in the wall about which the charge case is adapted to fracture in response to detonation of an explosive.

35. The method of claim 33, wherein said at least one groove is located on the outside of the charge case.

42. A controlled debris perforating system, comprising:
a shaped charge comprising a charge case having a wall defining a recessed region, the recessed region adapted to receive a liner and an explosive material and the charge case defining at least one slot in the wall about which the charge case is adapted to fracture in response to detonation of the explosive material.

43. The controlled debris perforating system of claim 42, wherein the at least one slot is axially oriented.

44. The controlled debris perforating system of claim 42, wherein the at least one slot is a V-notched groove.

45. The controlled debris perforating system of claim 42, wherein the at least one slot is an external slot.